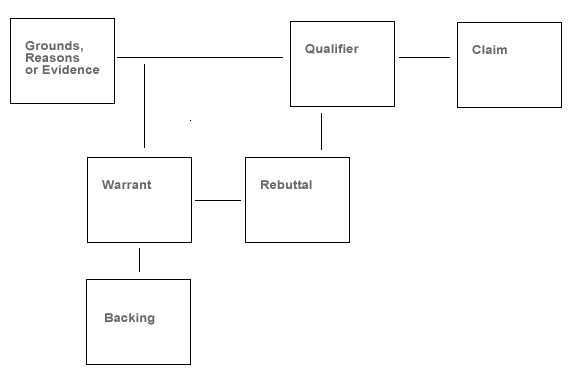
**Argumentation in the Content Areas:**

***What is an effective argument?***

*In a basic version of what is called the Toulmin argument model, there are three basic components in an argument: the claim – what you want your readers to believe or accept; the evidence – the facts, examples, statistics, or other types of information you use to support your claim; and the warrant –the reasoning that connects the evidence to the claim. More complex arguments also include a counterclaim – an opposing point of view, and a rebuttal- a refutation of that point of view. They may also have backing, which are facts, source information, or other additional information that “backs” up the evidence for the claim.*

*To present an argument, you should clearly state a claim, provide evidence to support the claim, and also discuss the warrants for your evidence. You might also acknowledge and refute a counterclaim.*

**Argument**

**Reasoning**

* Logical appeals
* Involves claims, evidence, warrants, backing, and rebuttals.
  + A **claim**
  + Based on **evidence** of some sort
  + **Reasoning** that explains **how the evidence supports the claim** (also called warrant).
  + **Backing** supporting the evidence and reasoning (sources, additional data, etc.).
  + **Qualifications** and **rebuttals** or counter arguments that refute competing claims

**To reiterate...**

*An effective argument has:*

* + A clear, logical **claim**
  + The presentation of reasonable **evidence** of some sort that supports the claim
  + **Reasoning** that explains **how the evidence supports the claim** (also called warrant).

*A complete argument will also have:*

* + **Backing** supporting the reasoning (additional information to “back” it up). Backing might include additional statistics, or even information about the source of the evidence.
  + **Qualifications** or statements of conditionality (for example, this claim only holds up in certain circumstances because... )
  + **Rebuttals** or counter arguments that refute competing claims

**Sample Claims for Content Area Analysis**

*(these are not necessarily valid claims... students can use evidence to either support or refute them)*

* The Neolithic Revolution was not really a revolution, but rather a long, gradual process of change.
* Sherman’s “March to the Sea,” although important, was not a key turning point in the Civil War as a Union victory was already near.
* The author of *Tuck Everlasting* attempts to glorify the idea of immortality and highlights all of the benefits that being immortal might bring.
* An important lesson in *The Outsiders* is that we should not make assumptions about people’s intelligence and character based upon how they dress or look, or where they live.
* Scientists have developed a very complete understanding of the earth’s core.
* Herbivores like deer, elk, and moose actually benefit from the presence of natural predators like wolves and mountain lions.
* ***What type of evidence would you need to support, or refute, any of these claims?***

**Progressive Introduction of Argumentation**

***Key Point***: We produce arguments about questions or problems, not topics. Instruction involving argumentation asks students to consider alternatives, evaluate evidence, and think critically... moving far beyond the memorization of lists of facts or procedures.

1. Introduce claims, evidence, and reasoning with a real world example kids can readily understand.
2. Introduce complete argument models about basic content-based claims. Use good examples and poor examples. Have students read them and try to identify the claim, evidence, and reasoning. See if they can identify which one is a stronger argument, and help them verbalize how they came to this conclusion. If necessary, deconstruct the models yourself with a think-aloud. Begin with relatively simple models of Claims, Evidence, and Reasoning.
3. Introduce a complete argument model about a content-based claim, but give it to students in sentence strips. Students have to reconstruct it from the strips and then identify the parts, claims, evidence, and reasoning.
4. Introduce a claim with supporting data/evidence and have students construct explanations (reasoning) that connect the evidence to the claim.
5. Introduce a claim with a data set including data that does not support the claim and data that does. Students have to identify which data supports the claim and which does not. They then have to explain their reasoning.
6. Introduce a claim with a limited data set / limited evidence, and have students explore the data set / texts to identify supporting evidence. Students then tie the evidence to the claim with reasoning and map out an argument in an outline.
7. Repeat of number 7, but students turn the graphic organizer into an essay.
8. As students gain mastery of these ideas, introduce more complex topics and data sets. Eventually, have the students generate their own claims and evidence sources.

***SAMPLE ARGUMENT RESOURCES:***

**Claim: Michael Jordan is the greatest basketball player in the history of the sport.**

**Evidence:**

**Michael Jordan - Chicago Bulls, Washington Wizards - 1984 - 1993, 1995 - 1998, 2001 - 2003**Career accomplishments:

- basketball Hall of Fame   
- member of six NBA championship teams  
- fourth all-time in field goals made in NBA history  
- fourth all-time in free throws made in NBA history  
- eighth all-time in free throws attempted in NBA history  
- second all-time in steals in NBA history  
- third all-time in points in NBA history  
- first all-time in points per game in NBA history  
- third all-time in steals per game in NBA history  
- 14-time NBA All-Star  
- Rookie of the Year  
- Defensive Player of the Year  
- five-time NBA MVP  
- six-time NBA Finals MVP  
- All-Rookie Team  
- 11-time All-NBA selection  
- nine-time All-Defensive Team selection

-winner of 2 Olympic Gold Medals, top scorer in ’84 games, second in ’92 games

*What other information would you need, if any?*

**Thinking about *Reasoning*:**

How would you EXPLAIN whether or not these statistics support the claim? What would be your criteria for “the greatest basketball player in history,” and how do the facts above show that Jordan met (or didn’t meet) these criteria? Would you need other information?

**Thinking about *counter-claims*:**

Who else might someone reasonably name as the best player ever? How would you refute that claim? What other information would you need?

**Claim: Movies that are sequels to successful first movies are very successful themselves.**

**Data:**

|  |  |  |  |
| --- | --- | --- | --- |
| Rank | | Top Movies of 2011 | Earnings in 2011 |
| 1. | [Harry Potter and the Deathly Hallows: Part 2 (2011)](http://www.imdb.com/title/tt1201607/) | [Harry Potter and the Deathly Hallows: Part 2](http://www.imdb.com/title/tt1201607/)(2011) | $381M |
| 2. | [Transformers: Dark of the Moon (2011)](http://www.imdb.com/title/tt1399103/) | [Transformers: Dark of the Moon](http://www.imdb.com/title/tt1399103/)(2011) | $352M |
| 3. | [The Twilight Saga: Breaking Dawn - Part 1 (2011)](http://www.imdb.com/title/tt1324999/) | [The Twilight Saga: Breaking Dawn - Part 1](http://www.imdb.com/title/tt1324999/)(2011) | $281M |
| 4. | [The Hangover Part II (2011)](http://www.imdb.com/title/tt1411697/) | [The Hangover Part II](http://www.imdb.com/title/tt1411697/)(2011) | $254M |
| 5. | [Pirates of the Caribbean: On Stranger Tides (2011)](http://www.imdb.com/title/tt1298650/) | [Pirates of the Caribbean: On Stranger Tides](http://www.imdb.com/title/tt1298650/)(2011) | $241M |
| 6. | [Fast Five (2011)](http://www.imdb.com/title/tt1596343/) | [Fast Five](http://www.imdb.com/title/tt1596343/)(2011) | $210M |
| 7. | [Mission: Impossible - Ghost Protocol (2011)](http://www.imdb.com/title/tt1229238/) | [Mission: Impossible - Ghost Protocol](http://www.imdb.com/title/tt1229238/)(2011) | $209M |
| 8. | [Cars 2 (2011)](http://www.imdb.com/title/tt1216475/) | [Cars 2](http://www.imdb.com/title/tt1216475/)(2011) | $191M |
| 9. | [Sherlock Holmes: A Game of Shadows (2011)](http://www.imdb.com/title/tt1515091/) | [Sherlock Holmes: A Game of Shadows](http://www.imdb.com/title/tt1515091/)(2011) | $187M |
| 10. | [Thor (2011)](http://www.imdb.com/title/tt0800369/) | [Thor](http://www.imdb.com/title/tt0800369/)(2011) | $181M |

**Reasoning: Construct a sentence or two that explains how the data/evidence above support the claim.**

|  |  |
| --- | --- |
| **Basic Argument Analysis:** | |
| What is the claim? |  |
| What evidence is presented to support the claim? |  |
| How is the relationship between the evidence and the claim explained? What is the reasoning? |  |
| Is backing needed for this evidence and reasoning? If so, is it provided? |  |
| Are there any qualifications needed or presented? What are they? |  |
| Are counter-arguments acknowledged? How? What are they? |  |
| Are counter-arguments refuted?  How? |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Basic Argument Rubric** | | | | |
|  | **3 – present and well developed** | **2- attempted, but needed more thought** | **1- mentioned, but not clearly** | **0- not present** |
| A clear claim |  |  |  |  |
| Sufficient evidence to support the claim |  |  |  |  |
| Clear reasoning connecting claim to evidence |  |  |  |  |
| Backing for the evidence |  |  |  |  |
| Qualifications |  |  |  |  |
| Counter-arguments refuted |  |  |  |  |
|  |  |  |  |  |
| Optional items related to grammar and mechanics |  |  |  |  |

***Middle School Argumentation in Social Studies / World History:***

* Driving Question: Why did civilizations first develop in only a few regions of Afroeurasia?

*For each argument, circle the main claim. Underline any examples of evidence. Then, highlight the reasoning or connections made between the evidence and the claim. If there is a counter argument, put highlight that with a different color. If the counter argument is refuted, highlight and underline the refutation.*

**Sample argument 1:**

Civilizations first developed in a few regions of Afroeurasia because the people there were more advanced at that time in history. Civilizations needed technology, and technology needs to be invented, and inventions are done by smart people. Therefore, civilizations logically developed where there were more smart people. For example, in the Americas, they didn’t develop a working wheel until the Europeans came. Egypt and Sumer had the wheel very early on in their history. They also didn’t develop iron or bronze tools in the Americas, while they did do this in places like Sumer and Egypt. They clearly didn’t have people advanced enough to invent these things, whereas people in Afroeurasia did come up with the inventions. So, having more intelligent inventors enabled civilization to first develop in a few regions of Afroeurasia. If they had been more advanced and smarter, they would have figured these things out I think. If you had a group of little kids trying to invent a solution to a problem in one place, and a group of adults in another place trying to solve the same problem, the adults would probably have a better solution faster because they know more and smarter... civilizations are kind of the same this way. Some people say that civilizations grew where there were more resources, but there is plenty of water and lots of plants in all parts of the world except for in deserts and on top of mountains, so I don’t think that argument holds up. People make the difference, not what is around them.

**Sample argument 2:**

Civilizations first developed in a few regions of Afroeurasia because of geography and the available natural resources, and also because humans first developed in Africa and were present for longer periods of time in this region. Civilization means lots of people living together, and for lots of people to live together, they need lots of food. It is difficult to have enough food for a large city, for example, if you only live by foraging. River valleys in Afroeurasia, like the Nile, not only had water, but they had lots of plants that were good for farming. Also, people had lots of time to learn about the plants there because humans originated in East Africa. The earliest evidence of farming in the world came from parts of the Middle East, and archaeologists think that agriculture developed over time as the climate got warmer, there was more food, and people had to move around less. This helped them learn about plants and start managing where plants grew, which lead to farming. Farming lead to more food, which supported more people. So why didn’t farming develop in other places as soon, like the Americas? In the Americas, there were fewer types of plants that were good for farming. This meant that people had to move around more and couldn’t make cities that were as big. They also didn’t have large mammals, which the people in Afroeurasia did. An ox in Afroeurasia could pull a wagon, or plow a field, but these technologies didn’t develop in the Americas because they didn’t have the animals to make them possible. In short, geography and natural resources made farming slower to develop in the Americas, but where farming was easier to develop in Afroeurasia people developed farming. They could then grow into civilizations. Some people say that the people in the Americas were not smart enough to develop things like the wheel or the plow, but they didn’t have the necessary resources or the need for these things, and so did not develop them. In the end, the development of civilization was all about people working with what they had available.

***Argument Analysis***: Now, read each argument again. Discuss the bulleted questions below each argument at your table and be ready to share your thoughts with the group.

**Sample argument 1:**

Civilizations first developed in a few regions of Afroeurasia because the people there were more advanced at that time in history. Civilizations needed technology, and technology needs to be invented, and inventions are done by smart people. Therefore, civilizations logically developed where there were more smart people. For example, in the Americas, they didn’t develop a working wheel until the Europeans came. Egypt and Sumer had the wheel very early on in their history. They also didn’t develop iron or bronze tools in the Americas, while they did do this in places like Sumer and Egypt. They clearly didn’t have people advanced enough to invent these things, whereas people in Afroeurasia did come up with the inventions. So, having more intelligent inventors enabled civilization to first develop in a few regions of Afroeurasia. If they had been more advanced and smarter, they would have figured these things out I think. If you had a group of little kids trying to invent a solution to a problem in one place, and a group of adults in another place trying to solve the same problem, the adults would probably have a better solution faster because they know more and smarter... civilizations are kind of the same this way. Some people say that civilizations grew where there were more resources, but there is plenty of water and lots of plants in all parts of the world except for in deserts and on top of mountains, so I don’t think that argument holds up. People make the difference, not what is around them.

* Is there a clear claim?
* Is there evidence?
* Does the reasoning effectively support the evidence?
* Is there backing for this reasoning?
* Are there missing qualifications?
* Are there counter-arguments to these points? Are they refuted here?
* What is problematic about this argument?

**Sample argument 2:**

Civilizations first developed in a few regions of Afroeurasia because of geography and the available natural resources, and also because humans first developed in Africa and were present for longer periods of time in this region. Civilization means lots of people living together, and for lots of people to live together, they need lots of food. It is difficult to have enough food for a large city, for example, if you only live by foraging. River valleys in Afroeurasia, like the Nile, not only had water, but they had lots of plants that were good for farming. Also, people had lots of time to learn about the plants there because humans originated in East Africa. The earliest evidence of farming in the world came from parts of the Middle East, and archaeologists think that agriculture developed over time as the climate got warmer, there was more food, and people had to move around less. This helped them learn about plants and start managing where plants grew, which lead to farming. Farming lead to more food, which supported more people. So why didn’t farming develop in other places as soon, like the Americas? In the Americas, there were fewer types of plants that were good for farming. This meant that people had to move around more and couldn’t make cities that were as big. They also didn’t have large mammals, which the people in Afroeurasia did. An ox in Afroeurasia could pull a wagon, or plow a field, but these technologies didn’t develop in the Americas because they didn’t have the animals to make them possible. In short, geography and natural resources made farming slower to develop in the Americas, but where farming was easier to develop in Afroeurasia people developed farming. They could then grow into civilizations. Some people say that the people in the Americas were not smart enough to develop things like the wheel or the plow, but they didn’t have the necessary resources or the need for these things, and so did not develop them. In the end, the development of civilization was all about people working with what they had available.

* How about this argument?
* Is there a clear claim?
* Is there evidence?
* Does the reasoning effectively support the evidence?
* Is there backing for this reasoning?
* What kind of backing would make this argument stronger?
* Are there missing qualifications?
* Are there counter-arguments to these points? Are they refuted here?

***Middle School Argumentation in English Language Arts... a sample question:***

* In *Tuck Everlasting*, the character of Winnie makes the choice to not become immortal. Why do you think the author, Natalie Babbitt, chose to end the story this way? In other words, what lessons do you think Natalie Babbitt wants the reader to take away from this particular aspect of the book?

***Middle School Argumentation in Science / Physical Science and Chemistry:***

* Do the results of our experiment (described below) support the Law of Conservation of Matter?

*Concept and Lab Overview:*

The law of conservation of mass indicates that mass cannot be created nor destroyed. This

means the total mass of reactants in a chemical reaction will equal the total mass of the products.

If a gas is produced during a reaction, which mass is often forgotten when calculating the final

mass because the students are unable to see the gas. For this reason, balloons or zip lock bags

may be used to collect the gas and preserve the mass. When balancing chemical equations, the law of conservation of mass is also demonstrated because the total number of atoms that goes into the reaction must be produced. So if 14 atoms are on the reactant side, then 14 atoms must be on the product side. Equations often require balancing to correctly demonstrate the law of conservation of mass. Students work in small cooperative groups to complete a laboratory exercise related to

conservation of mass. Using vinegar, baking soda and a sealed plastic bag, students determine

the mass of the vinegar and baking soda. Students then seal the vinegar and baking soda in a

plastic bag and mix the substances. A gas is formed which will inflate the bag. The mass of the

sealed bag will then be determined in order to ascertain if there has been any change in the mass

of the reactants and product before and after the reaction took place.

*Student Group responses:*

**Group 1)** Our lab results supported the Law of Conservation of Matter because there was no change in the mass of our materials after we mixed them together inside the bag. The mass of the materials was the same before and after we mixed them.

**Group 2)** Our lab results supported the Law of Conservation of Matter. Before we mixed the vinegar and baking soda, the mass of the baking soda, vinegar, and plastic bag combined was equal to X grams. When we mixed the vinegar and baking soda inside the closed bag and weighed it again, the mass was still X grams. When we opened the bag however, the mass decreased by \_\_\_\_\_\_\_\_\_\_. The law of conservation of matter states that matter cannot be created or destroyed, and this means that the total mass of reactants in a chemical reaction will be the same as the total mass of the products. When the vinegar and baking soda mixed, they created a fizzing mixture that looked different, but it had the same mass inside the plastic bag. Even though there had been a chemical reaction and it looked like there was less stuff, the mass was the same, meaning that matter had not been destroyed, only changed. When we opened the bag and it weighed less, we think this was because the chemical reaction had produced a gas, and that the gas escaped. It weighed less not because matter had been destroyed, but because some of the matter had changed in form and was able to escape the bag once it was open, so it was no longer being weighed.

**Discussion:** What is the difference between these two arguments? What does Group 2 do that Group 1 does not? If we think about Claims, Evidence, and Reasoning, what is missing from Group 1’s work?